Fact Sheet

CRREL'S SNOW COMMUNITY OF PRACTICE (CoP)

BACKGROUND

The CRREL Snow Community of Practice is a group of CRREL professionals and outside collaborators bound together by a common sense of purpose: To provide a one-stop solution to customers' snow science and engineering problems. The Snow CoP, therefore, pursues a common set of solutions, maintains a common store of knowledge, and relies on its combined expertise to collaboratively solve any snow problems presented to it. The CRREL Snow CoP currently numbers 48 members whose expertise includes hydrology, geophysics, chemistry, biology, acoustics, physics, geology, glaciology, atmospheric sciences, and mechanical, geological, civil, and electrical engineering, among other disciplines.

CAPABILITIES

The skills and knowledge within the CRREL Snow CoP and problems that members have successfully treated include the following:

Acoustic propagation over snow
Avalanches
Blowing snow
Chemistry of snow
Climate change
Climate modeling
Clouds
Distributed snow modeling
Electromagnetic propagation
Fluid flow in snow
Forest/snow interaction
Heat transfer in snow
Hydrologic modeling
Laboratory analyses of snow
Oxygen isotopes in snow
Radiation (solar and terrestrial)
Remote sensing
Snow characterization
Snow hydrology
Snow loads on structures
Snow permeability
Surface–air transfer
Surface energy budget
Vehicle mobility on snow

TOOLS

The community possesses state-of-the-art hard and soft tools that it can rapidly bring to bear on snow problems. The hard tools include facilities and equipment that range from coldrooms and laboratory equipment to an instrumented vehicle and a wide variety of field instruments. The soft tools are computer programs for

Advection and diffusion in snow
AVHRR snow mapping
Blowing snow
Bulk surface flux estimates
Detailed 1-D snow modeling
Discrete element snow modeling
Distributed snow modeling
Forest albedos
Forest thermal signatures
GIS manipulations
Global climate modeling
Hydrological modeling
Manipulating RadarSat data
Mesoscale modeling
Radiative background modeling
Snow sliding on roofs
3-D cloud scenes
Vehicle performance on snow

POINTS OF CONTACT

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